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TEXAS
ADVANCED ENERGY
BUSINESS ALLIANCE

PROJECT NO. 52373

REVIEW OF WHOLESALE ELECTRIC MARKET DESIGN	**§ §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

TEXAS ADVANCED ENERGY BUSINESS ALLIANCE'S MARKET DESIGN RECOMMENDATIONS

Texas Advanced Energy Business Alliance (TAEBA) appreciates the opportunity to submit comments in response to the Public Utility Commission of Texas' (Commission) Commissioner Guidance 3 filed on September 20, 2021. In accordance with the Deputy Executive Director's Memo, these recommendations are due by September 30, 2021, and require the inclusion of a bulleted, clearly-marked Executive Summary as a separate attachment (i.e., the last page of the filing). Therefore, these recommendations are timely filed and comply with the instructions.

I. Introduction and General Comments

TAEBA is a state business association composed of local and national energy companies seeking to make Texas' energy system more secure, clean, reliable, and affordable. Our members provide products and services across the advanced energy spectrum, including large-scale renewables and storage, distributed generation and storage, demand response (DR), energy efficiency (EE), electric vehicle charging equipment and software, and grid management services. In the wake of events that transpired last winter, Texas has a significant opportunity to refocus its policies, practices, and procedures to encourage the use of advanced energy resources in a manner that enhances system flexibility and reliability while maintaining affordability. TAEBA looks forwarding to working with the Commission, Commission Staff, and other stakeholders as the Commission continues to develop policies to strengthen the reliability of the electric grid while optimizing flexibility and affordability for all market participants.

TAEBA respectfully submits that the most important steps the Commission can make to improve the ERCOT market design to support reliability in the future are to (a) expand EE programs, (b) build on existing Demand Response (DR) mechanisms, and (c) focus on removing barriers to participation in existing energy and ancillary services (AS) markets. Each of these broad concepts is described below.

II. Expand Energy Efficiency (EE) Programs to Complement Demand Response (DR) Programs.

The foundation of any successful market design is EE. If customers are not first encouraged to

implement cost-effective EE measures, then any subsequent development of generation, Distributed Energy Resource (DER) infrastructure, transmission and distribution infrastructure, or DR controls could be oversized and more costly than necessary. Additionally, well-planned and deliberate EE incentives also can facilitate DR by, for example, encouraging the installation of more efficient heat pumps or controllable thermostats, and well-insulated homes and businesses are better able to support longer-duration demand responses. Improved customer equipment or innovative devices not only provide greater EE and customer savings, but also can be utilized in DR programs. DR and EE are complementary resources that are essential components of a balanced portfolio of demand side resources and a reliable grid and also represent a reliability strategy that can be implemented in short order.

Winter Storm Uri made it abundantly clear that additional demand-side resources are needed to protect customers. It is axiomatic that managing demand should be a key part of the discussion regarding how to make the ERCOT grid more resilient to future disasters since demand is what drives the need for generation. DR is not the only demand-side technology that can contribute to a more secure, clean, reliable, and affordable grid, however. DERs such as rooftop solar, energy storage, EE, and electric vehicles and associated charging infrastructure can bolster grid reliability and resilience, while lowering energy bills for Texans. TAEBA respectfully requests that the Commission commit to a policy of accelerating the expansion of DERs throughout the state, including ensuring that customers who invest in these technologies can participate in wholesale markets, individually or as part of an aggregation. TAEBA also continues to urge the Commission to adopt policies that remove regulatory barriers to non-wires solutions to assist with local distribution system reliability.

Accordingly, TAEBA recommends that the Commission take steps under existing statutory authority to encourage DR programs and deepen the state's commitment to EE through appropriate modifications to 16 Tex. Admin. Code § 25.181. One such revision could be to adopt an annual energy savings goal for utilities' residential and commercial service of one percent by 2025. This goal would provide meaningful opportunities for individual customers to implement EE measures (such as weatherizing their homes), saving on their bills year-round while reducing overall demand on the system.

III. Build on Existing DR Programs.

A. Eliminate the rule capping the budget for Emergency Response Service (ERS), include longer lead times to allow additional participation from a wider variety of loads, and

compensate participants for deploying ERS in a more flexible manner.[1]

ERCOT directly administers a reliability-based DR product, ERS, which allows load resources to reduce energy use during times of reserve scarcity. This program provides "command and control" demand reduction during emergency events when reserves are scarce.[2] Commissioner McAdams recently suggested PUCT Staff open a rulemaking project to amend 16 Tex. Admin. Code § 25.507 to consider (1) whether ERS should be deployed prior to reaching an Energy Emergency Alert (EEA), and (2) whether the amount of money available for ERS procurement be increased.[3] TAEBA agrees with the implication of Commissioner McAdam's second question: the potential for ERS is limited by a $50 million annual procurement limit set forth in 16 Tex. Admin. Code § 25.507, which has the effect of capping participation. And, TAEBA continues to urge the Commission to remove the cap, an action that will allow ERCOT to expand reliability DR.[4]

Additionally, TAEBA also recommends revising the requirements for deploying ERS. First, ERS is limited to resources with 10- and 30-minute response times but longer lead times could allow additional participation from a wider variety of loads and should be offered to encourage additional participation. Similar approaches are in place in other RTOs/ISOs such as NYISO where the emergency DR product has a 24-hour notification, a 21-hour notification, and a 2-hour notification.[5]

Second, the Commission should provide greater operational flexibility for ERS by considering allowing registered ERS participants to receive an energy-only (with Operating Reserve Demand Curve (ORDC) adders) payment for deploying outside their committed time periods at the request of ERCOT. During Winter Storm Uri, some ERS resources were dispatched only after involuntary load shedding had begun because they were contracted for later time periods, but these resources could potentially have deployed sooner, providing much needed relief prior to their obligated time period.[6]

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[1] *See* Comments of Texas Advanced Energy Business Alliance in Response to the Commission's Questions Regarding Demand Response, Project No. 52373 (Sep. 9, 2021) ("TAEBA DR Comments") at 3; Letter to Chairman D'Andrea Regarding Emergency Response Service and Distributed Energy Resources, PUCT Project No. 51812 (Mar. 15, 2021) ("TAEBA Mar. 15 Letter").

[2] TAEBA DR Comments at 3.

[3] Memorandum from Commissioner Will McAdams to Chairman Peter M. Lake, Commissioner Lori Cobos, and Commissioner Jimmy Glotfelty, Project No. 52373 (Sep. 22, 2021).

[4] *See* TAEBA Mar. 15, 2021 Letter.

[5] NYISO, Demand Response (May 2021) Presentation at Slide 46, available at https://www.nyiso.com/documents/20142/3037451/9-Demand-Response.pdf.

[6] TAEBA DR Comments at 7.

B. Set an interim, short-term goal of 3,000 MW ERS procurement and study the optimum amount of ERS to procure.

In conjunction with removal of the budgetary cap described above, the Commission should set an interim, short-term goal for a specific amount of ERS—3,000 MW, for example—and assess how the market responds to this conservative quantity. Making this service more price-responsive will help the service better fit into the context of the energy market, ultimately improving grid reliability and allowing much more load to voluntarily reduce consumption.[7] Along with this interim quantity goal, the Commission should direct ERCOT to study how much ERS can be cost-effectively procured to inform subsequent policy choices regarding ERS expansion.[8] Other regional markets, such as MISO, CAISO, and PJM, have achieved demand response penetration levels of seven to eleven percent of peak demand,[9] so we anticipate that ERCOT could achieve similar levels if development of demand response were prioritized as part of the Commission's market design reforms.

C. Direct Transmission and Distribution System Providers (TDSPs) to alter existing summer-only load management programs to provide year-round reliability and expand programs to target residential DR participation.[10]

ERCOT TDSPs offer summer-only load management programs pursuant to 16 Tex. Admin. Code § 25.181. TDSP programs are available to be deployed through an ERCOT issued instruction during an EEA Level 2 event, but the TDSPs may also deploy these resources for their own reliability purposes.[11] While these programs are predominantly used by commercial and industrial loads—and only during the summer—they could be extended to provide year-round reliability to address ERCOT's winter peaks and expanded to target residential DR participation.

Existing incentive mechanisms under 16 Tex. Admin. Code § 25.181 can be used to encourage adoption of DR-capable devices by residential customers who would then participate in DR programs whether offered by a retail electric provider (REP) or a third-party aggregator of DR. Consistent with longstanding market principles promoting competition over regulation, the TDSPs themselves, however,

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[7] Comments of Tesla, Inc., Project No. 52373 (Aug. 16, 2021) ("Telsa Aug. 16 Comments") at 2.

[8] *See also* Tesla Aug. 16 Comments at 9.

[9] FERC, 2020 Assessment of Demand Response and Advanced Metering (December 2020), available at https://cms.ferc.gov/sites/default/files/2020-12/2020%20Assessment%20of%20Demand%20Response%20and%20Advanced%20Metering_December%202020.pdf

[10] TAEBA DR Comments at 2, 6.

[11] ERCOT, Annual Report on Demand Response (December 2020), available at http://www.ercot.com/services/programs/load.

should not be engaged in directly recruiting customers as they do not have the retail business relationship with the customer.

D. Adopt an interim goal of developing DR programs that total at least 10 percent of system residential peak load.

As described above, TDSP load management programs should be expanded to allow for year-round demand response, including addressing winter peak demand. During the winter, residential devices such as cold weather heat pumps can provide much needed reliability as DR resources. During Winter Storm Uri, TAEBA members partnered with REPs to deploy these resources and provide relief during the weather emergency. TAEBA recommends that the Commission set an interim goal of developing DR programs that total at least 10 percent of system residential peak load. While this goal is modest given the projected growth of DR, particularly DR-enabled residential devices, we encourage the Commission to pursue a study of DR potential in ERCOT and modify this goal in line with the study results.

IV. Remove barriers to participation in existing energy and ancillary services (AS) markets.

A. Take advantage of the previous recommendations provided by stakeholders to develop holistic market solutions that remove barriers and allow multiple DR business models to thrive.[12]

The Commission has taken extensive input on DR barriers, such as in Project No. 41061, *Rulemaking Demand Response in the Electric Reliability Council of Texas Market,* but has not taken action through rulemaking nor directed ERCOT to resolve the many issues that have been highlighted by DR providers in the past. It is critical that as the Commission considers market reforms that demand-side resources be given more attention. While many of the barriers raised in Project No. 41061 remain unchanged over the years, what has changed is that the number and diversity of residential demand-side technologies available to participate in DR are proliferating across Texas. As more customers adopt technologies such as smart thermostats, electric vehicles, behind-the-meter storage, rooftop solar panels, and other more efficient and DR-capable appliances such heat pumps or hot water heaters, policies must evolve to unlock the full potential of these resources and empower Texas customers to take more control over how much energy they use, when they use it, and ultimately how much they pay in electricity bills.[13] TAEBA believes DR customers will respond to price signals as an incentive to curtail consumption and will

[12] TAEBA DR Comments at 3-5.

[13] TAEBA DR Comments at 3.

help address the demand side of the reliability challenge.[14]

B. Strive to make the provision of AS technology neutral.

ERCOT should remove non-technical barriers to greater participation by energy storage resources (ESRs) and Load Resources in providing AS. TAEBA is aware of three examples where barriers can easily be removed if the Commission directed ERCOT to do so. First, ERCOT recently has begun procuring additional Non-Spinning Reserves ("Non-Spin") as a conservative approach to ensuring the adequacy of dispatchable resources. TAEBA agrees with this approach and encourages ERCOT to continue similar approaches to ensure reliability. ERCOT is also currently considering revisions to the Nodal Protocols to allow Load Resources to provide Non-Spin.[15] However, it is TAEBA's understanding that ERCOT is not allowing energy ESRs to participate in Non-Spin.[16] This prohibition is discriminatory and should not be continued.

Second, non-residential demand-side resources are limited in participating in Responsive Reserve Service (RRS), with Non-Controllable Load Resources (NCLR) being prorated at 40 percent or more of their offering due to the high level of participation.[17] ERCOT should revise its AS plan and procurement methods so that resources are not limited in providing important frequency supporting services like RRS. Finally, only hydroelectric resources are permitted to use ON Synchronous Condenser (ONSC) status as a means of providing RRS. ESRs can also provide RRS using ONSC status but for a non-technical policy barrier.[18] If non-technical policy barriers were removed to allow for more flexibility, ESRs could also provide RRS using ONSC status, increasing the diversity of resources providing essential reliability services.

Further, to the extent the Commission desires in the future to incent or prioritize dispatchable capacity, TAEBA encourages the Commission to direct ERCOT to remain technologically neutral in developing market requirements and not limit any such incentives to conventional thermal generation. Many Resources, and aggregations of Resources, can serve as "dispatchable" capacity, providing

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[14] TAEBA DR Comments at 3.

[15] *See* Nodal Protocol Revision Request (NPRR) 1093.

[16] ERCOT has also recently proposed Nodal Protocol Revision Request (NPRR) 1096, which would limit participation by Resources (including ESRs) to those participants that are capable of providing sustained capacity for six consecutive hours. This unnecessarily long duration requirement for a one-hour product (Non-Spin) discriminates against certain types of Resources.

[17] *See* Hunt Energy Network, L.L.C.'s Response to Commission Staff's Request for Comment on September 2, 2021 Questions Concerning Demand Response at 4, Project No. 52373 (Sep. 9, 2021).

[18] *See* Hunt Energy Network, L.L.C.'s Response to Commission Staff's Request for Comment on Market Design Questions, Project No. 52373 (Aug. 16, 2021) ("HEN Aug. 16 Comments") at 8.

additional reliability benefits to the grid. Additionally, providing multiple time horizons or duration requirements (e.g., 6-, 12-, 24-hour products) should be considered to ensure maximum competition.

C. Remove barriers to aggregating DERs, behind-the-meter DERs, and Load Resources and allows these resources to participate in the market.

TAEBA recommends prioritizing market access for aggregations of DER portfolios, including behind-the-meter residential DERs and Load Resources. Aggregations of ESRs, loads, and other DERs can be operated and controlled so they are dispatchable and capable of providing AS, yet these "virtual power plants" (VPPs) are not currently permitted to participate in the ERCOT market. ERCOT must create systems to allow them to qualify to provide the same services a generator can provide. VPPs can both decrease demand and respond to frequency deviations (i.e., increase reliability) and have advantages over conventional frequency response services because VPPs typically have fast response times. Yet no process currently exists in Texas to allow these aggregated resources to participate to increase DR and reliability. TAEBA urges the Commission to implement policies to facilitate participation by VPPs.

1. Direct ERCOT to allow aggregations to DERs, whether in front of or behind the meter, to participate in wholesale markets as virtual power plants (VPPs).[19]

The Texas grid is changing rapidly as more customers invest in stand-alone systems to provide their own personal resilience and reliability. Following Winter Storm Uri, sales for residential backup systems including behind-the-meter storage, solar, and microgrids have surged. At the Commission's Work Session held on September 16, 2021, SunRun stated that post-Uri, 50 to 75 percent of solar customers are seeking installations that include battery storage.[20] To ensure improved system utilization and adequate customer compensation for the value that they can deliver to the benefit of the grid and other customers on it, TAEBA recommends that the Commission direct ERCOT to allow aggregations of DERs, whether in front of or behind the meter, to participate in wholesale markets as VPPs. VPPs can provide a range of services at the wholesale level including energy and AS. Unlike traditional resources, VPPs also can absorb excess power, inject energy when needed, and lower overall system costs.[21] Recognizing the benefits of competition, the Federal Energy Regulatory Commission (FERC) issued Order No. 2222 directing all grid operators under FERC jurisdiction to create frameworks to allow aggregated

[19] TAEBA DR Comments at 2.

[20] http://texasadmin.com/tx/puct/work_session/20210916/

[21] TAEBA DR Comments at 5.

DERs, including residential DR, to compete alongside traditional resources. As a result, all RTOs/ISOs except for ERCOT, which is not subject to the order, already have or are currently working with stakeholders to open up markets and opportunities for aggregated DERs. Urgent action from the PUCT is needed to ensure that the ERCOT market does not fall behind and that aggregated DER including many customer-sited resources can deliver the full scope of benefits to Texas energy customers.

Tesla's comments filed August 16, 2021, include a list of barriers to be removed to facilitate VPP participation, including market design, technical, and interconnection barriers.[22] This list should serve as a starting point in a high priority Commission rulemaking project to remove barriers to accelerate market inclusion of these technologies. This approach will provide customers with new revenue streams and enable them to contribute to grid needs much more broadly, delivering billions of dollars of savings to Texans[23] at a time when customers are bracing themselves for the cost increases that will come from the current securitization proceedings and the market redesign effort.

2. Adjust technical requirements in ERCOT designed mostly by and for traditional generation resources and order ERCOT to allow third party aggregators to sell customer demand reduction directly into the market and be paid for this transaction through market settlements.

Technical requirements in ERCOT generally have been designed mostly by and for traditional generation resources and must be adjusted to remove barriers to residential DR. Stakeholders have long struggled with finding consensus on protocols to allow DR to fully participate in ERCOT energy and AS markets, and this has been a major market limitation. For example, DR providers must be a load serving entity (LSE) or contract with one to be in ERCOT's Security Constrained Economic Dispatch (SCED), and additionally, some LSEs prevent customers from participating, creating additional barriers to DR participation. TAEBA recommends that the Commission direct ERCOT to allow third-party aggregators to sell customer demand reduction directly into SCED and be paid for this transaction through market settlements.[24]

3. Develop telemetry requirements with the end-use customer in mind to ensure that the cost to participate in wholesale markets does not outweigh economic benefits residential DR customers could reap from participating.

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[22] *See* Tesla Aug. 16 Comments at 7-9.

[23] See TAEBA, "Value of Integrating Distributed Energy Resources in Texas" (Nov. 2019). Available for download at www.texasadvancedenergy.org.

[24] TAEBA DR Comments at 4.

An additional barrier in ERCOT is the requirement that resources be able to respond to five-minute base points. Many load resources are unable to turn off equipment or turn it back on every five minutes. As stated by one REP in Project No. 41061, this time requirement does not allow DR resources "to safely and reliably reduce load for most electric consumer's equipment and processes; most equipment cannot be turned off and on every five minutes as might be required by SCED and consumption generally cannot be moved up and down incrementally at a customer's location with fine granularity DR."[25] Adjusting the requirements of SCED to create more flexibility could allow a wider range of DR capabilities to participate in the real time market. Additionally, telemetry requirements should be developed with the end-use customer in mind. The cost of telemetry to participate in wholesale markets pursuant to ERCOT's granular requirements often outweighs any economic benefits residential DR customers could reap from participating in the market. Less stringent requirements (e.g., accepting advanced metering data or statistical methods in place of traditional telemetry) are needed to allow residential customers to participate.[26]

4. Explore the creation of additional AS that provide enhanced reliability but can accommodate the characteristics of DR, whether residential or commercial.

For improved residential and commercial DR participation, price signals must be sufficiently high to provide an incentive, must be consistent (occur at many intervals), and must be reasonably predictable to justify the expenditures needed to participate in the market. If market entry requirements (such as telemetry) are overly burdensome and complicated, potential residential and commercial market participants will be kept out of the market. Additionally, while REPs have established relationships with customers and are well suited to provide DR programs for residential and commercial customers, business models should not be limited to REP programs, but also should allow for third-party aggregation. An emerging business model is energy-as-a-service (EaaS) which allows customers to manage energy use without having to make any capital investment.[27] EaaS providers offer various energy-related services (including energy management, energy advice, energy asset installation) to help customers reduce their energy bills and ensure local reliability. For EaaS (and similar) models to flourish, providers must be able to respond in real-time to optimize on behalf of a customer. These types of models are likely to grow over time as customers agree to allow a competitive service provider to manage their energy needs and risks

[25] Comments of MP2 Energy, LLC at 6, Project No. 41061 (Jan. 19, 2018).

[26] TAEBA DR Comments at 4-5.

[27] *See* TAEBA DR Comments at 7.

to deliver comfort and reliability at an affordable price. Allowing multiple participation options to thrive will maximize competition and consumer benefits.[28] TAEBA recommends that the Commission explore rules needed to accommodate new business models and enable greater demand-side flexibility.[29]

Recognizing that creating new AS is a longer-term effort, TAEBA also urges the Commission to consider implementing additional AS that provide not only reliability benefits but also can accommodate the characteristics of DR, whether residential or commercial. For example, PJM includes a Synchronized Reserve Market (SRM) where DR (including residential DR) can directly participate in wholesale AS markets. The short duration of events means that residential customers can participate with little impact on customer convenience or comfort (10-minute response time for a 30-minute event duration). This service can be combined with PJM's emergency demand response program (similar to ERCOT's ERS) and offer an additional revenue opportunity. A similar service in ERCOT could bolster grid reliability while also allowing residential customers to participate in the market.[30]

D. Use AS for the purposes for which they are designed.

Certainty and predictability of how the ERCOT market will be managed are key to ensuring a robust, dynamic market that maintains the reliability and resiliency of the electric grid. The Commission and ERCOT should ensure that AS products are being used in a non-discriminatory manner, consistent with their intent.

For example, during Winter Storm Uri the release of RRS capacity to SCED as energy relatively early in the storm left the electric grid's important frequency response capacity depleted.[31] ERCOT must maintain sufficient AS to arrest frequency decay. Reserving RRS capacity until it is the last available resource is the most reliable way of ensuring adequate Physical Responsive Capability (PRC) and reliability of the system.[32]

Similarly, while TAEBA supports ERCOT's recent tack of procuring Non-Spin as a conservative approach to ensuring the adequacy of dispatchable resources, ERCOT should make sure it is using Non-Spin as an AS that provides reserve capacity, and not for other unintended purposes (e.g., correcting load forecast errors).

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[28] TAEBA DR Comments at 5.

[29] TAEBA DR Comments at 5.

[30] TAEBA DR Comments at 7.

[31] *See* HEN Aug. 16 Comments at 6.

[32] *See* HEN Aug. 16 Comments at 6-8.

CONCLUSION

TAEBA appreciates the Commission's consideration of these Market Design Recommendations and stands ready to work with the Commission, Commission Staff, and stakeholders to make the changes necessary to continue Texas' leadership and innovation in energy. We share a common goal: keeping the lights on and lowering costs for customers and businesses.

Respectfully submitted,

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EXECUTIVE SUMMARY

Below is an Executive Summary of TAEBA's Market Design Recommendations in response to the Commissioner Guidance 3 filed on September 20, 2021.

- Expand Energy Efficiency (EE) Programs to Complement Demand Response (DR) Programs, including adoption of an annual savings goal of one percent by 2025.
- Build on Existing DR Programs.
  - Eliminate the rule capping the budget for Emergency Response Service (ERS), include longer lead times to allow additional participation from a wider variety of loads, and compensate participants for deploying ERS in a more flexible manner.
  - Set a short-term, interim goal of 3,000 MW ERS procurement and study the optimum amount of ERS to procure.
  - Direct Transmission Distribution System Providers (TDSPs) to alter existing summer-only load management programs to provide year-round reliability and expand programs to target residential DR participation.
  - Adopt an interim goal of developing DR programs that total at least 10 percent of system residential peak load.
- Remove barriers to participation in existing energy and ancillary services (AS) markets.
  - Take advantage of the previous recommendations provided by stakeholders to develop holistic market solutions that remove barriers and allow multiple DR business models to thrive.
  - Strive to make the provision of AS technology neutral.
  - Remove barriers to aggregating DERs, behind-the-meter DERs, and Load Resources and allows these resources to participate in the market.
    - Direct ERCOT to allow aggregations of DERs, whether in front of or behind the meter, to participate in wholesale markets as virtual power plants (VPPs).
    - Adjust technical requirements in ERCOT designed mostly by and for traditional generation resources and order ERCOT to allow third party aggregators to sell customer demand reduction directly into the market and be paid for this transaction through market settlements.
    - Develop telemetry requirements with the end-use customer in mind to ensure that the cost to participate in wholesale markets does not outweigh economic benefits residential DR customers could reap from participating.
    - Explore the creation of additional AS that provide enhanced reliability but can accommodate the characteristics of DR, whether residential or commercial.
  - Use AS for the purposes for which they are designed